

BEES OF THE SUB-FAMILY OSMINAE IN THE COLLECTION OF THE BRIGHAM YOUNG UNIVERSITY.¹

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It is always necessary in beginning a study of the fauna of a region to collect and determine the species of the group or groups being considered. Since very little has been published on the Hymenoptera of the Great Basin the writer feels that the following list of thirty-six species of Osminae will be of interest to students of the Apoidea. The writer has under way a morphological study of various species of many genera of the Apoidea.

The species discussed in this paper are specimens collected from Utah and contiguous states, most of which are within the Great Basin Region. So far as the writer has been able to determine only fifteen species of Osminae have been reported from Utah, these by Professor T. D. A. Cockerell and Miss Grace A. Sandhouse now at the U. S. National Museum. The remaining twenty-one species are apparently new records for Utah. Species marked with an asterisk have been previously reported.

The writer is indebted to Miss Grace A. Sandhouse and Dr. Vasco M. Tanner who have determined and verified many of the species of this list.

SUB-FAMILY OSMINAE.

1. *Osmia albolateralis* Cockerell.

UTAH: 1 ♀ Bryce Canyon (Vasco M. Tanner); 1 ♀ Bears Ears, San Juan Co. (Tanner).

2. *Osmia abnormis* Cresson

UTAH: 1 ♀ 6 ♂ Rosevere Creek, Raft River Mountains (Tanner) (D. Eldon Beck); 1 ♂ La Sal Mountains (James Kartchner).

*3. *Osmia cobaltina* Cresson.

UTAH: 2 ♀ Zion National Park (Tanner); 1 ♀ La Sal Moun-

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tains (Anson Call); 1 ♀ Aspen Grove, Mt. Timpanogos (Tanner); 1 ♀ Rosevere Creek, Raft River Mts. (Tanner).

ARIZ.: 1 ♀ Kaibab Forest (Anson Call).

WYO.: 1 ♀ Fort Bridger (Clarence Cottam).

*4. *Osmia coloradensis* Cresson.

ARIZONA: 1 ♀ Rim Grand Canyon, Kaibab Forest (Tanner).

*5. *Osmia fulgida* Cresson.

UTAH: 1 ♀ Bears Ears (Call).

6. *Osmia giliarum* Cockerell.

UTAH: 1 ♀ Logan Canyon (Tanner); 1 ♀ Glendale (Tanner).

7. *Osmia integra* Cresson.

UTAH: 7 ♂ Provo Bench, Provo (D. Elden Beck).

8. *Osmia inurbana* Cresson.

UTAH: 1 ♂ Rosevere Creek, Raft River Mts. (Beck).

9. *Osmia leonis* Cockerell.

UTAH: 1 ♀ Zion National Park (Tanner); 1 ♀ Dividend, Eureka (Tom Spalding).

10. *Osmia longula* Cresson.

UTAH: 1 ♀ Woodside (Kartchner).*

COLORADO: 1 ♀ Mesa Verde National Park (Call).

*11. *Osmia melanotricha* Lovell and Cockerell.

WYOMING: 3 ♀ Burnt Fork (C. Lynn Hayward & Tanner).

*12. *Osmia nassa* Cockerell.

UTAH: 1 ♀ Summit Danials Canyon, near Heber (Hayward).

*13. *Osmia mandibularis* Cresson.

UTAH: 1 ♀ Sheep Creek, Duchense Co. (Claudeous J. D. Brown); 6 ♀ Wandship (Tanner & Beck).

COLORADO: 1 ♀ Mesa Verde National Park (Tanner).

14. *Osmia bucephala* Cresson.

UTAH: 1 ♂ La Sal. Mts. (Call).

15. *Osmia armaticeps* Cresson.

UTAH: 1 ♀ Rosevere Creek, Raft River Mts. (Tanner); 1 ♀ Bears Ears (Irvin Rasmussen).

IDAHO: 1 ♀ Lava Hot Springs (Beck).

16. *Osmia atrocyanea* Cockerell.

UTAH: 1 ♀ Wellsville Canyon (Tanner).

17. *Osmia kenoyeri* Cockerell.

COLORADO: 1 ♀ Mesa Verde National Park (Call).

18. *Osmia penstemonis* Cockerell.

UTAH: 1 ♀ Bryce Canyon (Rasmussen).

19. *Osmia proposita* Sandhouse.

UTAH: 1 ♀ Bears Ears (Tanner).

20. *Osmia texana* Cresson.

UTAH: 1 ♀ Logan (Hayward).

21. *Osmia cyanella* Cockerell.

UTAH: 1 ♀ Logan Canyon (Tanner); 1 ♀ Wellsville Canyon (Tanner).

*22. *Osmia wardiana* Cockerell.

UTAH: 8 ♀ Provo Bench, Provo (Beck); 1 ♀ Bears Ears, San Juan Co. (Tannen); 1 ♀ Sheep Creek, Duchense Co. (Tanner); 1 ♀ Raft River Mts. (Tanner).

COLORADO: 1 ♀ Mesa Verde National Park (Tanner).

NEVADA: 3 ♀ Lehmans Cave, Mt. Wheller (Tanner).

23. *Osmia tristella* Cockerell.

UTAH: 1 ♀ Rosevere Creek, Raft River Mts. (Tanner).

24. *Osmia nigrafrons* Cockerell.

WYOMING: 1 ♀ Burnt Fork (Hayward).

25. *Osmia permorata* Cockerell.

UTAH: 2 ♀ Provo Bench, Provo (Beck).

26. *Osmia pascoensis* Cockerell.

UTAH: 1 ♀ Sheep Creek (Tanner).

*27. *Osmia lignaria* Say.

UTAH: 1 ♀ 1 ♂ Zion National Park (Tanner); 1 ♂ 4 ♀ Pine Valley Mt. (Tanner); 9 ♀ Spanish Fork (Beck); 1 ♂ 13 ♀ Provo (Tanner; John Allen Rowe; Hayward; Herman L. Thomas; O. Wilford Olsen; Call; Beck); 1 ♀ Utah Lake (Olsen); 1 ♀ Wellsville Canyon (Hayward); 1 ♀ Deep Creek Mts. (Tanner); 2 ♀ Rosevere Creek, Raft River Mts. (Tanner); 1 ♀ Bear Lake Valley (Hayward).

IDAHO: 1 ♂ 1 ♀ Lava Hot Springs (Beck); 1 ♀ Driggs (Kartchner); 1 ♀ Moscow (Joseph Sudweeks).

The following six species of *Osmia* were reported by Miss Sandhouse (Calif. Acad. of Sciences, 4th series, Vol. XIII, No. 22, 1924); but are not in the B. Y. University Collection.

*28. *Osmia subpurpurea* Cockerell.

UTAH: 2 ♀ Salt Lake City (E. P. Van Duzee).

*29. *Osmia phaceliae* Cockerell.

UTAH: 1 ♀ Park City (Van Duzee); 2 ♀ Vivian Park (Van Duzee).

*30. *Osmia cyanosoma* Cockerell.

UTAH: 1 ♀ Danials Canyon, Heber (Van Duzee); 1 ♀ Vivian Park (Van Duzee).

*31. *Osmia subornata* Cockerell.

UTAH: 1 ♀ Park City (Van Duzee).

*32. *Osmia nifoata* Cockerell.

UTAH: 1 ♀ Park City (Van Duzee).

*33. *Osmia Wilmattae* Cockerell.

UTAH: 8 ♀ Park City (Van Duzee); 4 ♀ Vivian Park (Van Duzee); 1 ♀ Logan (Van Duzee); 2 ♀ Salt Lake City (Van Duzee).

34. *Monumetha albifrons* Kirby.

UTAH: 5 ♀ Bryce Canyon (Call, Rasmussen); 2 ♀ Aspen Grove Mt. Timpanogos (Tanner); 2 ♀ Sheep Creek, Duchense Co. (Brown & Tanner); 2 ♀ Flaming Gorge (Tanner); 1 ♀ Deep Creek Mts. (Tanner); 1 ♀ Rosevere Creek, Raft River Mts. (Tanner); 1 ♀ Logan Canyon (Clarence Cottam).

34. *Monumetha alibifrons* Kirby.

COLORADO: 4 ♀ Mesa Verde National Park (Tanner & Kartchner).

WYOMING: 1 ♀ Burnt Fork (Hayward).

35. *Monumetha fulgida* Cresson.

UTAH: 1 ♀ Provo Bench, Provo (Beck).

NEW MEXICO: 1 ♀ Ship Rock (Kartchner).

COLORADO: 4 ♀ Mesa Verda National Park (Tanner).

*36. *Alcidamea hypocrita* Cockerell.

UTAH: 2 ♀ Wellsville Canyon (Tanner).